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LIST OF PUBLICATIONS AND PATENTS WITH ABSTRACTS

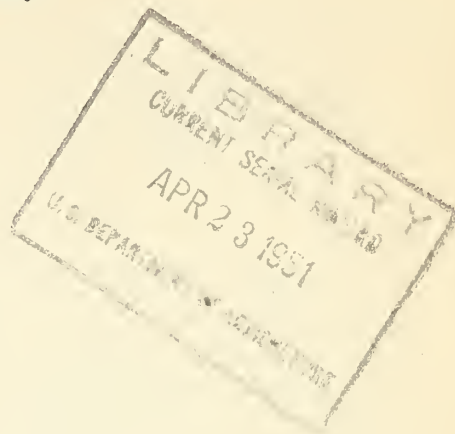
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CONTENTS:

ALFALFA
ANALYTICAL
ANTIBIOTICS
FRUITS
PECTIN
POULTRY
RICE
VEGETABLES
WHEAT
WOOL
UNCLASSIFIED

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Bureau of Agricultural and Industrial Chemistry
Agricultural Research Administration
UNITED STATES DEPARTMENT OF AGRICULTURE



ALFALFA

THE OCCURRENCE OF VITAMIN B₁₂ AND OTHER GROWTH FACTORS IN ALFALFA. E. M. Bickoff, A. L. Livingston, and N. S. Snell, Arch. Biochem. 28(2):242-52, Sept., 1950. Microbiological assays of alfalfa for apparent vitamin B₁₂ activity yielded values of 55 ppb. for fresh alfalfa and 45 ppb. for dehydrated meal. Employment of differential assay techniques indicated that more than 85 percent of the total apparent vitamin B₁₂ activity is due to factors other than B₁₂.

ANALYTICAL

THE FRIEDRICH MICROKJELDAHL METHOD FOR NITROGEN--EFFECT OF POTASSIUM SULFATE CONCENTRATION. G. E. Secor, M. C. Long, M. T. Duggan, and L. M. White, Jour. Assoc. Offic. Agr. Chem. 33(3):872-80, Aug. 15, 1950. A group of representative organic compounds containing NO, NO₂, =N=N=, and -N=N- linkages were analyzed by a variation of the Friedrich microkjeldahl method using 333 mg. and 667 mg. potassium sulfate per ml. of sulfuric acid. Results obtained after digestion with the lower concentration were satisfactory as to precision and accuracy, but those with higher concentration were low and the precision was poor.

REPORT ON SUGARS IN PLANTS (1950). K. T. Williams, A. Bevenue, and E. F. Potter, Jour. Assoc. Offic. Agr. Chem. 33(3):816-18, Aug. 15, 1950. A batch procedure, using selected ion-exchange resins, was as effective as the resin-column procedure and has provided a simple method for removal of non-sugar-reducing substances from extracts of dehydrated vegetables prior to analysis for sugars. The batch procedure removes non-sugar-reducing substances more effectively than neutral lead acetate.

CARIUS IODOMETRIC MICRODETERMINATION OF BROMINE IN ORGANIC COMPOUNDS. L. M. White and M. D. Kilpatrick, Analyt. Chem. 22(8):1049-51, Aug., 1950. The Carius digestion has been combined with the iodometric measurement of bromine to produce a simple method for determination of this halogen in organic compounds. The method is characterized by simple technique, a very favorable volumetric factor, a good end point, and short working time per sample.

CARIUS IODOMETRIC MICRODETERMINATION OF IODINE IN ORGANIC COMPOUNDS. L. M. White and G. E. Secor, Analyt. Chem. 22(8):1047-49, Aug., 1950. A method is described for the microdetermination of iodine in organic compounds. Certain samples in aqueous solution also can be analyzed by the method. The method combines the Carius digestion with a simple modification of the Winkler iodometric titration.

NUCLEAR MAGNETIC RESONANCE ABSORPTION IN HYGROSCOPIC MATERIALS. T. M. Shaw and R. H. Elsen, Jour. Chem. Phys. 18(8):1113-14, Aug., 1950. Preliminary measurements of magnetic energy absorbed by hydrogen nuclei in vegetable tissues confirm a theoretical expectation of a linear change in energy absorption with water content and appear to establish the feasibility of use of nuclear absorption phenomena as the basis for an improved instrument for rapid determination of moisture content of biological materials. Such an instrument (in contrast to present electrical moisture meters) should be useful over the entire range of water content encountered in natural or modified biological systems.

MICROWAVE TECHNIQUES FOR THE MEASUREMENT OF THE DIELECTRIC CONSTANT OF FIBERS AND FILMS OF HIGH POLYMERS. T. M. Shaw and J. J. Windle, Jour. Applied Physics 21(10):956-61, Oct., 1950. A resonant cavity method is described for the determination of the dielectric constant of polymeric solids in the form of fibers, films, and thin cylinders. Methods for investigating electrical anisotropy are outlined.

NOTE ON THE DETERMINATION OF MOISTURE IN STARCHES BY THE KARL FISCHER REAGENT. E. A. McComb, Jour. Assoc. Offic. Agr. Chem. 33(4):1021-22, Nov. 15, 1950. The Karl Fischer reagent has been used successfully and with advantages of speed and convenience, in the determination of moisture content of various starches.

MEASUREMENT OF COLOR CHANGES IN FOODS. E. J. Eastmond, Advances in Chemistry Series, 3, 3-12, 1950. Methods are described for determining the extent to which original natural color is preserved in processing and subsequent storage of foods. Color differences may be evaluated indirectly in terms of some physical characteristic of the sample or extracted fraction thereof. The reflectance spectrophotometric method provides time-constant records in research on foods, while photoelectric colorimeters and reflectometers may prove useful in industrial color applications. Psychophysical notation may be converted by standard methods to the more descriptive terms of Munsell hue, value, and chroma.

DETERMINATION OF WATER IN SOME DEHYDRATED FOODS. B. Makower, Advances in Chemistry Series, 3, 37-54, 1950. Direct or indirect methods may be used to determine moisture in dehydrated foods. Indirect methods must be calibrated in terms of direct methods--the most common of which are the oven, distillation, and Fischer. Accuracy of direct methods is difficult to evaluate except by comparison with a chosen reference method. Several reference methods are reviewed, but none can be given an unqualified recommendation as most practical and suitable for all foods. An indirect measure of moisture is the equilibrium vapor pressure of water, which can be measured easily and accurately. Vapor pressure may be a better index of the stability of dehydrated foods than the moisture content.

ANALYTICAL METHODS for levulose in fruit, maturity of raw sweet corn, tenderness and maturity of processed peas, starch and amylose in peas, and reducing sugars in vegetables are included in other sections of this supplement.

ANTIBIOTICS

ATC-168, ANNOTATED BIBLIOGRAPHY OF SUBTILIN: Assay, Microbiological Production, Purification and Chemistry, Biological Activity, and Related Compounds. J. C. Lewis, revised with supplement, October, 1950. Originally issued October, 1947. This bibliography with abstracts covers all published work on subtilin to date, from other institutions as well as the Western Regional Research Laboratory.

METHYL ESTERS OF SUBTILIN. Patent No. 2,520,908 to J. F. Carson and J. C. Lewis, Sept. 5, 1950. The antibiotic, subtilin, is esterified with methanol to produce methyl esters of subtilin which contain 9-13 methoxyl equivalents per 10⁴ grams. These esters exhibit a solubility from 25 to 50 times that of subtilin.

PROCESS OF PRODUCING SUBTILIN. Patent No. 2,524,089 to J. J. Stubbs, R. E. Feeney, J. A. Garibaldi, and I. C. Foustel, Oct. 3, 1950. The antibiotic, subtilin, is produced by the aerated, submerged culture of B. subtilis. Various media may be used such as asparagus juice, beet molasses, or a synthetic medium containing sucrose, nitrogenous material, and mineral salts.

FRUITS

AIC-283, PREPARATION OF FIG POWDER. J. E. Brekke and W. F. Talburt, July, 1950. Fig powders have been prepared from commercial dried figs by tunnel, vacuum, and drum drying procedures and the resulting powders compared. Minimum heat damage was incurred in vacuum drying but drum-drying and tunnel-drying resulted in products considered satisfactory. The latter powders possessed a characteristic fig flavor and, in addition, a slightly caramelized flavor which was considered pleasing. Utilization of fig powder in bakery products is briefly discussed. A colorimetric method for assaying heat damage is described.

PROGRESS IN PROCESSING PEAR CANNING WASTE. A. H. Brown, W. D. Ramage, and H.S. Owens, Food Packer 31(7):30-31, July, 1950; second part published under title POMACE AND MOLASSES FROM PEAR WASTE--\$2.50 A TON, 31(8):50, 52, Aug., 1950. Reports progress during a season of pilot plant study on a utilization process involving chemical treatment of pear waste to facilitate separation of juice from pomace in the preparation of pear molasses and dry pear pomace for use as stock feed.

REFINE PEAR CANNING WASTE FOR USE AS SYRUP BASE. A. M. Neubert, D. W. Graham, O. E. Olson, and C. L. Beardsley (Laboratory of Fruit and Vegetable Products, Pullman, Wash., in cooperation with Apple Growers Assoc., Hood River, Oregon). Food Indus. 22(9):1545-46, Sept., 1950. A preliminary report of studies on a process for recovery of soluble solids from pear canning waste. The process involves conversion of milled waste into a calcium pectinate gel, which can be pressed to give high yields of a clear juice. By treatment with an ion exchange resin, gelatin, and decolorizing carbon, the juice is purified to a colorless liquid suitable for use as a sweetening ingredient in canned pears.

DETERMINATION OF LEVULOSE IN FRUIT--A POLAROGRAPHIC METHOD. K. T. Williams, E. A. McComb, and E. F. Potter, Analyt. Chem. 22(8):1031-33, Aug., 1950. Sugars are extracted and prepared for measurement by conventional methods. Dextrose and sucrose present do not interfere and concentrations of levulose varying from 0.05 to 2.0 mg. per ml. are suitable for measurement. Ion exchange resins are used to control pH.

ADAPTATION OF THE TENDEROMETER FOR THE QUANTITATIVE DETERMINATION OF FIRMNESS IN CALCIUM-TREATED APPLE SLICES. D. G. Guadagni, Food Technol. 4(8):319-21, Aug., 1950. Data presented show reliability of the tenderometer for measurement of firmness of cooked apple slices. Firmness values obtained by a simple test-cooking procedure reflected accurately the firmness obtained in actual pie baking. The method appears suitable for control work in calcium treatment for firming apple slices.

THE NITROGENOUS CONSTITUENTS OF CITRUS FRUIT JUICES. L. B. Rockland, J. C. Underwood, and E. A. Beavens (Laboratory of Fruit and Vegetable Chemistry, Pasadena, Calif.), Calif. Citrograph 35(11):490-92, Sept., 1950. In studies of constituents of citrus juices that might account for off-flavors, the presence of several amino acids and other nitrogenous substances has been demonstrated in Valencia orange, Marsh grapefruit, and Eureka lemon juices.

PREVENTION OF SUCROSE HYDRATE FORMATION IN COLD PROCESSED FROZEN FRUIT SPREADS. J. E. Brekke and W. F. Talburt, Food Technol. 4(10):383-86, Oct., 1950. Three methods for prevention of sucrose hydrate in frozen fruit products were studied: control of storage temperature, hermetic sealing, and use of invert sugar as part of total sugar added. The latter two methods appeared to be effective, and -10°F. appeared to be more favorable for hydrate formation than lower or higher temperatures.

DEHYDROFROZEN APPLES. W. F. Talburt, L. H. Walker, and M. J. Powers, Food Technol. 4(12):496-98, Dec., 1950. Dehydrofreezing, a new food processing technique combining the advantages of dehydration and freezing, has been satisfactorily applied to many of the leading Western apple varieties. Details on enzyme inactivation, drying temperatures, reduction of weight and volume, effects of variety and maturity, packaging, and their advantages and adaptability to bakery and institutional uses are given.

*PROCESSING CITRUS WASTES. W. D. MacLay, Canner 111(1):13, 22, July 8, 1950. A brief review of methods and problems involved in the utilization or disposal of citrus wastes, particularly problems with low-solids liquids.

*WASTE UTILIZATION. W. D. Ramage, Canner 111(1):11-13, July 8, 1950. A short review of by-product possibilities, disposal, costs, and pear waste processing.

PECTIN

THE SPECIFICITY OF PECTINESTERASES FROM SEVERAL SOURCES WITH SOME NOTES ON PURIFICATION OF ORANGE PECTINESTERASE. L. K. MacDonnell, R. Jans, E. F. Jansen, and R. L. Haver, Arch. Biochem. 28(2):260-73, Sept., 1950. Three plant pectinesterases, orange, alfalfa, and tomato, and one from a fungal source were shown to be highly specific for esters of polygalacturonic acid. Non-pectic esterase hydrolysis was not related to the pectinesterase activity and in part, at least, was due to acetyl esterase. A highly purified orange pectinesterase was shown to be essentially devoid of any hydrolytic activity except on pectin, methyl polygalacturonate, and ethyl polygalacturonate.

DETERMINATION OF ACETYL IN PECTIN. E. L. Fippen, R. M. McCready, and H. S. Owens, *Analyt. Chem.* 22(11):1457-58, Nov., 1950. A simple and accurate method for determination of acetyl in pectin is presented, which involves saponification of pectin at room temperature followed by steam distillation and titration of acetic acid.

COATING OF FOODS WITH PECTINATE FILMS. Patent No. 2,517,595, H. S. Owens and T. H. Schultz, Aug. 8, 1950. Foods are coated with an edible envelope of a calcium-alkali metal pectinate film by dipping the food in a dispersion of the pectinate and then drying the dip coating to form the film. The pectinate coatings are edible, glossy, and smooth, and protect the foodstuff from contamination. The coatings are particularly advantageous to encase normally sticky foods such as figs, prunes, raisins, etc. to render these products non-coherent.

POLYGALACTURONIDE ALKYLAMIDES. Patent No. 2,520,123, to J. F. Carson, Aug. 29, 1950. Pectin, or a similar polygalacturonide, is reacted with an alkylamine under anhydrous conditions. The resulting alkylamides contain a high ratio of amide groups to anhydrogalacturonide repeating units and exhibit surface-active properties.

ISOLATION OF PECTINIC ACIDS. Patent No. 2,522,534, to H. S. Owens and H. Lotzkar, Sept. 19, 1950. Low-methoxyl pectinic acids are produced in solid, stable form by extruding a thin stream of a solution of a low-methoxyl pectinate into an acid bath whereby a thin, self-supporting film of precipitated pectinic acid is produced. The film is then washed and dried and serves as a stable, convenient source of pectinic acid.

POULTRY

ABSENCE OF GROWTH-INHIBITING ACTIVITY IN TRYPSIN INHIBITOR FROM EGG WHITE. A. A. Klose, B. Hill, and H. L. Fevold, *Arch. Biochem.* 27(2):364-67, July, 1950. The purified trypsin inhibitor from egg white has been shown to have no growth-inhibiting activity when fed to rats at levels as high as 2.5 percent of the diet.

THE NUCLEIC ACID OF AVIDIN. H. L. Fraenkel-Conrat, W. H. Ward, N. S. Snell, and E. D. Ducay, *Jour. Amer. Chem. Soc.* 72(8):3826-27, Aug., 1950. Avidin, whether prepared by a new method or that reported in the literature, represents an insoluble complex of protein and desoxypentose nucleic acid. The two components have been separated electrophoretically.

AMINO ACID COMPOSITION OF EGG PROTEINS.. J. C. Lewis, N. S. Snell, D. J. Hirschmann, and H. L. Fraenkel-Conrat, *Jour. Biol. Chem.* 186(1):23-35, Sept., 1950. Amino acid and other analyses are presented for the following egg proteins: crystalline lysozyme, electrophoretically homogeneous conalbumin and ovomucoid, and the less pure proteins, avidin, phosvitin, and vitellin.

COMPARISON OF THE IRON-BINDING ACTIVITIES OF CONALBUMIN AND OF HYDROXYLAMIDO-PROTEINS. H. L. Fraenkel-Conrat, *Arch. Biochem.* 28(3):452-63, Oct., 1950. Hydroxylamido groups were introduced into proteins. These derivatives give colored complexes with iron similarly to conalbumin. In contrast to conalbumin,

the hydroxylamido proteins retain their activity after denaturation, chemical modification, and enzymatic degradation. Their activity resides only in the acylhydroxylamine group; in contrast, no such grouping could be detected in conalbumin. It is concluded that the iron-binding activity of conalbumin is not mediated by a hydroxylamine group.

THE METAL-BINDING ACTIVITY OF CONALBUMIN. H. L. Fraenkel-Conrat and R.E. Feeney, Arch. Biochem. 29(1):101-113, Nov., 1950. The metal-binding activity of conalbumin was studied by chemical and microbiological assays. The activity was found dependent upon native protein structure, as well as upon integrity of many or most of its amino, phenolic, amide, and/or guanidyl, and probably carboxylic, imidazole and other groups. Copper and iron were apparently both bound at the same sites of the protein molecule.

PREPARATION AND STORAGE OF FROZEN COOKED POULTRY AND VEGETABLES. H. L. Hanson, H. M. Winegarden, M. B. Horton, and H. Lineweaver, Food Technol. 4(11):430-34, Nov., 1950. Results are reported on studies of frozen cooked foods containing turkey and chicken along with sauces and vegetables, including peas, carrots, celery, lima beans, corn, snap beans, green pepper, and mushrooms. Simmering and pressure cooking have proved superior to roasting for creamed turkey products. Older chickens produce more flavorful products than younger. Packaging is very important.

PROCESS OF UTILIZING DETERGENTS TO SOLUBILIZE KERATIN MATERIALS. Patent No. 2,517,572, to C. B. Jones and D. K. Mecham, Aug. 8, 1950. Relates to solubilization of keratin materials such as feathers, horn, hoof, etc. to obtain products which can be used for the preparation of artificial films, fibers, plastics, etc. The keratin is heated in an aqueous solution containing a detergent (a sodium alkyl sulphate, for example) and a reducing agent, such as sodium bisulfite.

SALTS OF PHOSVITIN FROM EGG YOLK AND METHOD FOR PRODUCING THE SAME. Patent No. 2,526,680, to D. K. Mecham, Oct. 24, 1950. Egg yolks are treated with a dilute solution of magnesium sulfate and from the precipitate phosvitin is isolated, a protein characterized by a particularly high phosphorus content (9.5-10.5 percent).

RESTING CELL FERMENTATION OF EGG WHITE BY STREPTOCOCCI. A. M. Kaplan, M. Soloway, W. W. Osborne, and H. Tubiash (Microbiological Research Division), Food Technol. 4(12):474-77, Dec., 1950. The use of Streptococci in a resting state appears to hold promise as a pure culture method for the fermentation of egg white prior to drying. The egg white is rapidly fermented; proteolysis does not occur; no off odors or flavors are apparent; and the growth of organisms known to cause undesirable fermentations is suppressed. A dried albumen varying in range from acid to near neutrality can be prepared as desired.

RICE

RESEARCH AND THE RICE INDUSTRY OF CALIFORNIA. W. L. Shaw, E. B. Kester, and O. R. Vasak, Rice Jour. 53(12):6, 8-12, Dec., 1950. The California rice industry has faced a problem of surpluses which might be avoided by one or more of the following courses of action: reduce production of short-grain rice, replace short-grain by more acceptable types of rice, and increase domestic consumption. The latter might be obtained by development of new food outlets and products from rice.

VEGETABLES

SCORING TECHNIQUES FOR SULFITED FOODS. M. M. Boggs and A. C. Ward, Food Technol. 4(7):282-84, July, 1950. The first sample containing sulfite dulled acuity of the tasters for subsequent samples containing the same amount of sulfite, but it had no influence on the score for a subsequent unsulfited sample.

DEHYDROFROZEN PEAS. W. F. Talburt and R. R. Legault, Food Technol. 4(7):286-91, July, 1950. Dehydrofrozen peas (partially dried to reduce weight and volume by about 50 percent) are equal in all respects to frozen peas, both immediately after processing and after one year of storage at -10°F. Processing details are given. Effects of varying amount of water removed during drying and of varying blanching times and temperatures upon quality of product are evaluated.

MEASUREMENT OF NONENZYMATIC BROWNING OF DEHYDRATED VEGETABLES DURING STORAGE. C. E. Hendel, G. F. Bailey, and D. H. Taylor, Food Technol. 4(9):344-47, Sept., 1950. Methods are presented for measuring degree of nonenzymatic browning of dehydrated white potato, carrot, cabbage, sweetpotato, and onion. These methods are based on extraction of soluble colored materials from suitably ground samples, followed by clarification of the resultant extracts and photometric evaluation of extracted color. Degree of browning is taken as the difference between optical density values for samples before and after storage.

WHICH MATURITY INDEX METHOD BEST FOR RAW SWEET CORN? G. H. Carter, O. E. Olson, and J. L. Henry (Laboratory of Fruit and Vegetable Products, Pullman, Wash.), Food Packer 31(9):44-46, Sept., 1950. In a study of several methods of determination of maturity of sweet corn, refractive index was found to be the most rapid, accurate, and useful.

DETERMINATION OF STARCH AND AMYLOSE IN VEGETABLES. APPLICATION TO PEAS. R. M. McCready, J. Guggolz, V. Silveira, and H. S. Owens, Analyt. Chem. 22(9):1156-58, Sept., 1950. A rapid and accurate method is described in which starch of peas is measured colorimetrically with the aid of the sugar-anthrone-sulfuric acid reaction and amylose is measured colorimetrically with iodine. Analyses of dried and fresh peas (both smooth and wrinkled) are reported.

METHODS FOR MEASURING THE TENDERNESS AND MATURITY OF PROCESSED PEAS. R. U. Makower, Food Technol. 4(10):403-08, Oct., 1950. In peas the organoleptic quality known as "maturity" is measured most directly by trained human judges. The tenderometer for raw peas and alcohol-insoluble solids for processed peas are the best objective methods. Other less adequate methods and need for further methodological research are discussed.

WARM "PUFFS" POTATOES. W. O. Harrington and F. P. Griffiths, Food Indus. 22(11):1872-2005-6, Nov., 1950. Potato puffs have a crunchy texture, browned or toasted color, and hollow interiors. They are made by dehydration of potato dice or half dice in air at 300°-340°F.

A STUDY OF THE USE OF ION-EXCHANGE RESINS FOR THE REMOVAL OF NON-SUGAR REDUCING SUBSTANCES IN THE ANALYSIS OF FRESH AND DEHYDRATED VEGETABLES FOR REDUCING SUGARS. K. T. Williams, A. Bevenue, and B. Washauer, Jour. Assoc. Offic. Agr. Chem. 33(4):986-94, Nov. 15, 1950. A simple and rapid method has been developed for removal of non-sugar reducing substances that interfere in determination of sugars in dehydrated vegetables. The simple batch procedure, using selected ion-exchange resins, was found to be more effective in removing interfering substances than the conventional neutral lead acetate clarification procedure.

PREPARATION AND STORAGE OF FROZEN COOKED POULTRY AND VEGETABLES. H. L. Hanson, H. M. Winegarden, and M. B. Horton, Food Technol. 4(11):430-34, Nov., 1950. (See under Poultry.)

AIC-287, CONVERGENCE CRITERIA IN NUMERICAL SOLUTION OF THE DIFFUSION EQUATION. W. B. Van Arsdell, June, 1950. Formulas for space and time increments are deduced which insure convergence in numerical computation of unsteady-state conditions in certain diffusion processes.

FACTORS INFLUENCING QUALITY OF TOMATO PASTE. I. CHEMICAL COMPOSITION OF CALIFORNIA COMMERCIAL TOMATO PASTE. J. C. Underwood (Laboratory of Fruit and Vegetable Chemistry, Pasadena, Calif.), Food Research 15(5):366-72, Sept.-Oct., 1950. Canned tomato-paste samples from 12 California canning plants were analyzed for carotene, lycopene, vitamin C, sugar, salt, acidity, iron, copper, ash, and insoluble solids.

FACTORS INFLUENCING THE QUALITY OF TOMATO PASTE. II. PECTIC CHANGES DURING PROCESSING. R. J. McColloch, B. W. Nielsen, and E. A. Beavens (Laboratory of Fruit and Vegetable Chemistry, Pasadena, Calif.), Food Technol. 4(9):339-43, Sept., 1950. A study was made of tomato paste processing methods in California and samples were obtained from commercial plants. Results of studies show that failure to inactivate pectic enzymes during paste manufacture may result in complete loss of pectic substances, which is reflected in lower consistency of finished product.

APPARATUS FOR BLANCHING DEEP BEDS OF VEGETABLES. Patent No. 2,522,513, to G. T. Hemmeter, Sept. 19, 1950. The device includes a hollow column in which the vegetables are blanched. Apparatus is provided for feeding the vegetables into the top of the column and removing the blanched material from the bottom. Steam is introduced into the column at a point about midway of its length. One of the important features of the device is that the column is open at both ends whereby the steam can sweep and scavenge all residual and liberated air from the vegetable bed whereby rapid and efficient transfer of heat is obtained.

WHEAT

STABILIZATION OF SOLUTIONS OF WHEAT GLUTEN IN DILUTE ACETIC ACID BY BRIEF HEAT TREATMENT. H. S. Olcott, Cereal Chem. 27(6):514-16, Nov., 1950. Equipment suitable for heat treatment of wheat gluten solutions is described. The treatment results in partial stabilization.

CHARACTERIZATION OF WHEAT GLUTEN. II. AMINO ACID COMPOSITION. J. W. Pence, D. K. Mecham, A. H. Elder, J. C. Lewis, N. S. Snell, and H. S. Olcott, Cereal Chem. 27(4):335-41, July, 1950. The amino acid compositions of glutens from 17 flours, differing widely in type, source, and baking behavior, have been determined. The compositions were found to be essentially uniform.

PREPARATION OF GLUTEN PHOSPHATES. Patent No. 2,513,351, to H. S. Olcott and A. Mohammad, July 4, 1950. Gluten phosphates are prepared by heating a mixture of gluten, urea, and phosphoric acid. The products have marked water-absorbing and gelling properties and hence may be employed as bodying and thickening agents in various applications where it is common to use the natural gums.

GLUTEN PHOSPHATES AND METHOD FOR PREPARING THEM. Patent No. 2,522,504, to R. E. Ferrel and H. S. Olcott, Sept. 19, 1950. Gluten is reacted with concentrated phosphoric acid. The product is neutralized with sodium hydroxide, washed, and dried. The resulting gluten phosphate has marked water-absorbing and gelling properties, and may be used as a bodying or thickening agent in various applications where it is common to use the natural gums.

WOOL

MODIFICATION OF WOOL WITH BETA-PROPIOLACTONE. Patent No. 2,517,573 to H. W. Jones and H. P. Lundgren, Aug. 8, 1950. Wool is chemically modified by reacting it with beta-propiolactone. The modified wool has increased felting properties; thus it forms stronger felts than does the natural wool and further, the modified wool forms a felt more rapidly than does natural wool.

UNCLASSIFIED

OXIDATIVE METHOD OF PRODUCING 7-HYDROXYPHENOTHIAZONE-3. Patent No. 2,516,120, to D. F. Houston, July 25, 1950. The compound, 7-hydroxyphenothiazine-3 (also known as thionol), is prepared by heating phenothiazine with concentrated sulphuric acid under controlled conditions of time and temperature. The product is useful as a dyestuff, dyestuff intermediate, therapeutic agent, etc.

ISOLATION OF USNIC ACID. Patent No. 2,522,547, to J. B. Stark and E. D. Walter, Sept. 19, 1950. Usnic acid, a substance of antibiotic properties, is isolated from California Spanish moss (Ramalina reticulata) by a procedure involving acetone extraction of the moss followed by purification of the crude extract and crystallization of usnic acid therefrom.

PREPARATION OF DIGLYCERIDES. Patent No. 2,523,309, to E. B. Kester, Sept. 26, 1950. Diglycerides are produced by heating a glycidyl ester with a fatty acid. For example, glycidyl laurate is heated with stearic acid to produce the alpha-lauryl, gamma-stereoyl ester of glycerine.

